

CLAIMS

1. Articles prepared by extrusion, moulding and combination thereof, comprising a heterophasic polyolefin composition comprising (percent by weight):
 - 1) 65-95% of a crystalline propylene polymer selected from propylene homopolymer and random co- and terpolymer of propylene with 0.1-10% of an α -olefin selected from ethylene, a C_4 - C_{10} α -olefin and a mixture thereof, the said polymer being insoluble in xylene at ambient temperature in an amount over 85% and having a polydispersity index ranging from 4 to 13 and an intrinsic viscosity ($[\eta]$) value of over 2.2 dl/g; and
 - 2) 5-35% of an elastomeric olefin polymer of ethylene with a C_3 - C_{10} α -olefin and optionally a diene, having an ethylene content ranging from 15 to 85% and an intrinsic viscosity ($[\eta]$) value of at least 1.4 g/ml;
 wherein the ratio of the intrinsic viscosity value of crystalline polymer (1) to that of elastomeric polymer (2) ranging from 0.45 to 1.6.
2. The articles of claim 1 wherein the crystalline propylene polymer has a polydispersity index from 4.5 to 12.
3. The articles of claim 1 and 2 having modulus of elasticity in tension higher than 2000 MPa,
4. Mono- or multi-layer pipes wherein at least one layer comprises a composition according to claims 1 to 3.
5. Mono- or multi-layer pipes according to claim 4, wherein the values of ring stiffness (SN) of solid wall pipes with smooth inner and outer surface, with an external diameter of ≥ 20 mm to ≤ 2000 mm pipes, satisfies the following mathematical relationship

$$270 \text{ kN/m}^2 \times [10/(\text{SDR}-1)]^3 \geq \text{SN} \geq 130 \text{ kN/m}^2 \times [10/(\text{SDR}-1)]^3,$$
 where SDR representing the ratio of the external diameter to the pipe wall thickness.
6. Pipes according to claim 4 or 5, in which the pipe is either a waste water pipe, a underground drain pipe or buried sewage pipe.
7. A heterophasic polyolefin composition having a melt flow rate value up to 2 g/10 min and comprising (percent by weight):
 - 1) 65-95% of a crystalline propylene polymer selected from propylene homopolymer and random co- and terpolymer of propylene with 0.1-10% of an α -olefin selected from ethylene, a C_4 - C_{10} α -olefin and a mixture, the said polymer being insoluble in

- xylene at ambient temperature in a percentage over 85% and having a polydispersity index ranging from 4 to 13 and an intrinsic viscosity ($[\eta]$) value of over 2.2 dl/g; and
- 2) 5-35% of an elastomeric olefin polymer of ethylene with a C_3 - C_{10} α -olefin and optionally a diene, having an ethylene content ranging from 15 to 85%, and having an intrinsic viscosity ($[\eta]$) value of at least 1.4 g/ml;
- wherein the ratio of the intrinsic viscosity value of crystalline polymer (1) to that of elastomeric polymer (2) ranging from 0.45 to 1.6.
8. The composition of claim 7 wherein the crystalline propylene polymer has a polydispersity index from 4.5 to 12.
9. A process for producing the article of claim 1 wherein the composition according to claim 7 is extruded or moulded or both.
10. Extruded profiles, films and sheets made from the composition of claims 7 and 8.